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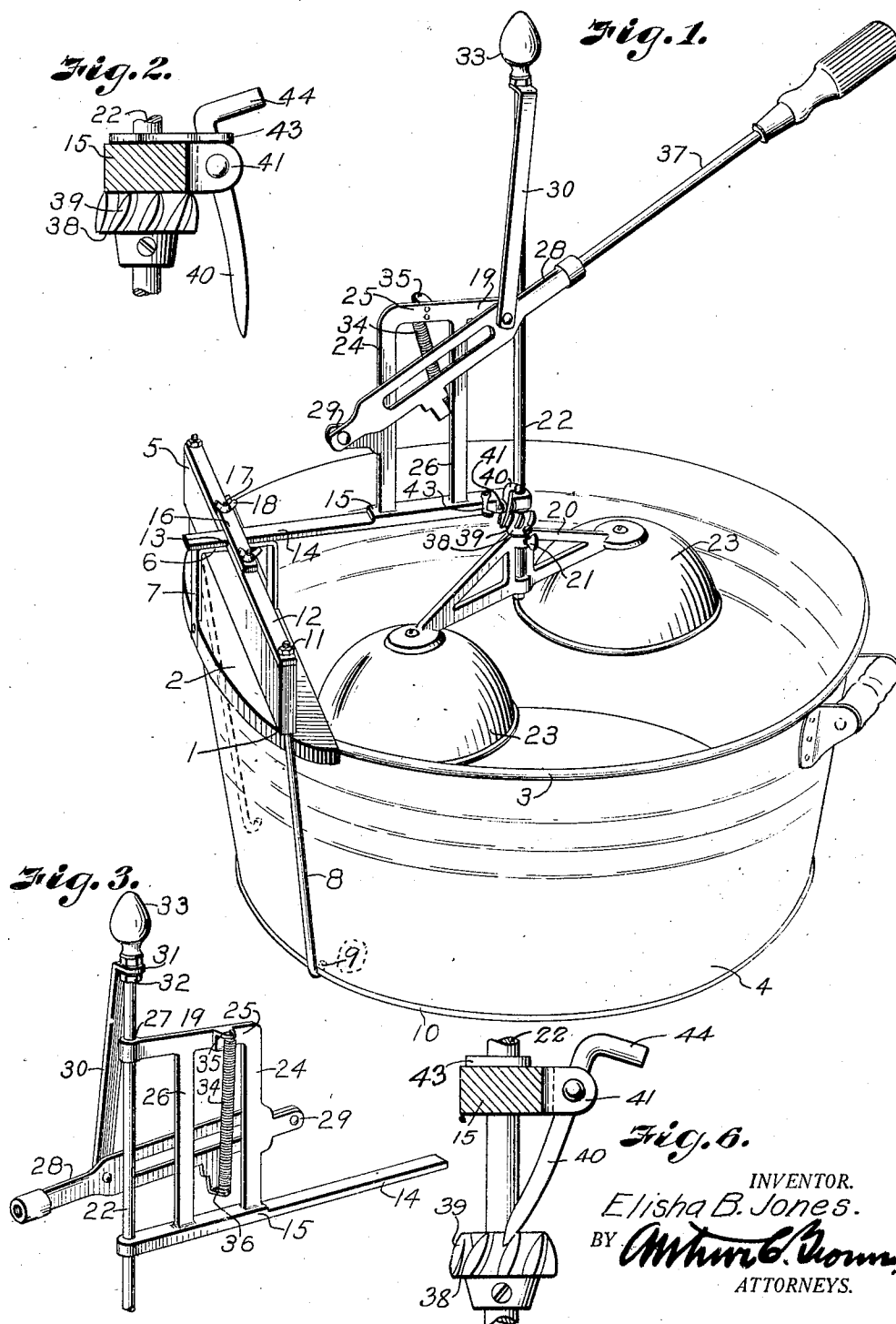
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DETACHABLE WASHING APPARATUS

Filed March 30, 1928

2 Sheets-Sheet 1



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Fig. 4.

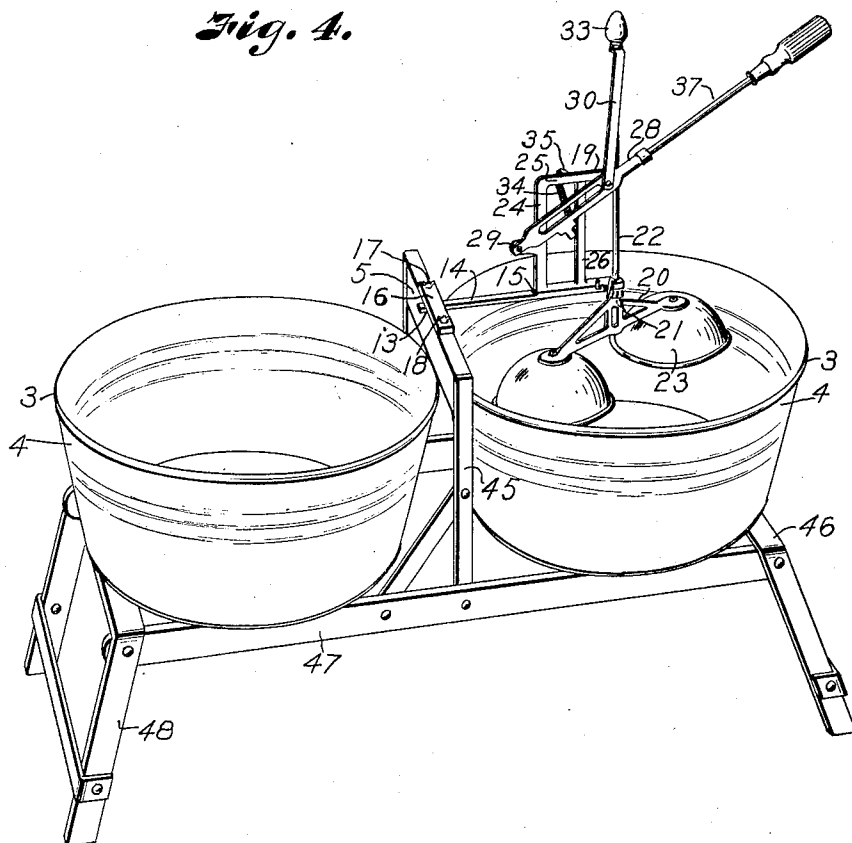
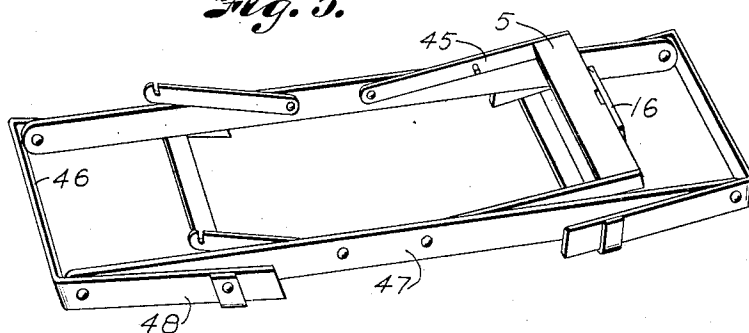


Fig. 5.



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DETACHABLE WASHING APPARATUS

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My invention relates to washing devices and has for its object to attach washing machine elements to an ordinary tub to constitute a washing machine, to provide manually operable washing machine elements, to manually reciprocate vacuum cups supported above a tub, and to rotate the vacuum cups automatically when the cups are reciprocated.

In accomplishing these and other objects of the invention I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of my invention installed on a tub.

Fig. 2 is a detail perspective view of a vacuum cup rotating mechanism, having a ratchet-engaging pawl latched in retracted position, the cup supporting rod being shown fragmentarily and a supporting bracket arm in section.

Fig. 3 is a detail perspective view of a rod-supporting frame and operating arm, the rod being shown fragmentarily.

Fig. 4 is a perspective view of a modified form of mounting means illustrating the supporting bracket adapted for associating the device with a bench provided with two tubs.

Fig. 5 is a perspective view of the bracket supporting bench and modified bracket in collapsed position.

Fig. 6 is a view similar to that of Fig. 2, but showing the pawl in normal ratchet-engaging position.

Referring in detail to the drawings:

1 designates a supporting bracket comprising a base member 2 adapted for positioning on the rim 3 of a tub 4 adjacent one edge thereof. 5 is a vertical wringer-supporting member over which a yoke 6 extends, the legs 7 of the yoke being engaged with the base member 2.

Rods 8 extending through the vertical member 5 have hooks 9 at their lower ends engageable under the lower rim 10 of the tub whereby the support may be securely engaged with the tub by tightening nuts 11 on the upper ends of the rods. Reinforcing strips 12 overlies the upper edge of the

vertical member 5, interposed between the nuts 11 and the member, the inner ends of the strips 12 being spaced to provide a slot 13 to admit the outer end 14 of a frame arm 15 to the cross member of the yoke 6, and a retaining strip 16 overlies the slot 13 to retain the arm on the yoke. The retaining strip is removably secured to the bracket member 5 by bolts 17 extending through the strips 12 and into the member 5, and thumb screws 18 on the outer ends of the bolts.

The structure described is provided for supporting a skeleton frame 19 and a vacuum cup bridge 20 above the tub. The bridge 20 is fixed by a manually operable screw 21 to the lower end of a spindle rod or shaft 22, which is slidably and rotatably movable in the frame, as presently described, whereby vacuum cups 23 fixed to the outer ends of the bridge 20 may be moved vertically into and out of the tub and may be rotated for positioning the cups in varying relation to the contents of the tub.

The frame 19 comprises the aforesaid outer frame arm 15, a vertical post 24 spaced from the outer end of the arm, and a second arm 25 parallel with said arm 15 and projecting from the upper end of the post 24, an intermediate reinforcing web 26 extending from arm to arm being preferably provided for adding rigidity to the structure. The actuating and supporting rod 22 extends through the outer end of the frame arm and also rotatably through an opening 27 in the outer end of the supplemental arm 25 and is yieldingly supported in elevated position by a lever 28 pivoted in an ear 29 extending rearwardly from the post 24 and a link 30 pivotally connected with the lever adjacent its outer end, the link having a perforate lateral flange 31 in which the upper end of the rod is rotatably extended. A nut 32 supports the link from the rod and a knob-like handle 33 fixed in the end of the rod is rotatable over said flange; a spring 34 having one end 35 fixed to the cross arm 25 and its opposite end secured to an ear 36 on the lever 28 urging the link to lift the rod into upwardly extended position. A handle 37 is provided on the outer end of the lever 28

whereby the rod may be reciprocated to urge the vacuum cups into contact with the contents of the tub, while the cups, rod and handle may be returned to elevated position by the spring 34.

I further and preferably provide means for automatic rotation of the vacuum cups upon reciprocation of the rod comprising a ratchet wheel 38 fixed to the rod above the bridge and below the frame arm, having slantingly positioned arcuate teeth or blades 39 and a pawl 40 pivotally mounted in lugs 41 on the frame arm for swinging in clockwise direction, and being stopped by the frame arm 15 for normally engaging the blades 39 of the wheel when the rod is elevated, whereby engagement of the blades with the pawl will cause the rod to move rotatably. Referring to Fig. 6, the pawl engages one blade 39^a of the upwardly moving ratchet-wheel to cause the rod to turn, and the adjacent blade 39^b of the repositioned downwardly moving wheel engages the pawl and pivots it outwardly, the pawl then returning automatically to blade-engaging position. A horizontally movable latch 43 is pivoted on the frame arm adjacent the pawl to engage under a hook end 44 of the pawl for restraining the same away from the blade-engaging position when it is desirable to dispense with the service of the pawl. The hook may also serve to urge the pawl to swing in clockwise direction. A boss-like shoulder 41' may be provided between the lugs 41, for example on the frame arm, to limit the pivoting of the pawl in either direction, and preferably when the lower edge of the frame arm 15 would not stop the pawl in desired position to engage the blades.

In the modified form of the supporting bracket shown in Fig. 4, the vertical spacing member 5 is secured to vertical posts 45 supported by a collapsible bench 46 comprising longitudinal frame members 47 to which leg members 48 are pivotally connected, whereby the end 14 of the frame arm 15 may be inserted from one or another side of the supporting bracket to associate the vacuum cups and operating mechanism with one or another of the tubs that may be positioned on the similar portions of the bench.

In using the device, the supporting bracket is associated suitably with a tub for supporting the frame and rod above the contents thereof, the spring supporting the vacuum cups in elevated position. The cups are moved into contact with the contents by downward pressure on the lever handle, and the spring assists in returning the cups to elevated position.

The left hand of the operator may grasp the rod knob to rotate the rod to reposition the cups in relation to the contents, while the cups are in elevated position, and the pressure of the left hand on the rod promotes the

desired effect of the cups on the materials being washed, the pawl which is pivoted on the frame being latched in retracted position for manual rotation of the rod. The pawl may be unlatched and will then engage the ratchet upon each upward movement of the cups to cause a partial rotation of the rod and cups.

What I claim and desire to secure by Letters Patent is:

1. In a washing device for attachment to a tub including a supporting bracket engageable with the tub and a vacuum cup rod vertically reciprocally supported by said bracket, means including a ratchet on the rod having slanting blades for rotating the same operable upon reciprocation of the rod.

2. In a washing device including a vacuum cup bridge, a frame, a rod fixed to the bridge and having an upper end extending above the frame, and a handle lever pivoted in the frame, a link pivoted in the handle and connected with the upper end of the rod, means on the frame confining the rod to rectilinear movement, and a spring fixed to the frame and the handle yieldingly retaining the rod in elevated position.

3. In a washing device for attachment to a tub including a supporting bracket engageable with the tub having a transverse arm extending in spaced relation with the bottom of the tub, a bridge spindle vertically slidable in said arm, a bar pivotally mounted in the bracket, a link pivotally connected to said bar and engaged with the spindle whereby pivoting of said bar will reciprocate the spindle, and means including a pawl pivotally supported by said arm and engageable with the spindle upon upward movement thereof for rotating the spindle.

4. In a washing device for attachment to a tub including a supporting bracket engageable with the tub, a vacuum cup rod vertically reciprocally supported by said bracket, and means resiliently restraining the rod in upwardly reciprocated position, means including a ratchet on the rod having slanting blades and a pawl pivoted on the frame and engageable by the blades upon reciprocation thereof for rotating the rod.

5. In a washing device for attachment to a tub, a supporting bracket including a transverse arm having a rod opening and a second arm parallel to the transverse arm having a rod opening vertically aligned with the opening of the first named arm, a cup-supporting rod reciprocable in said openings in a rectilinear path, and means including a pawl pivoted on said first-named arm and a ratchet fixed on the rod for intermittently moving the rod rotatively.

6. In a washing device of the character described, a supporting frame including a transverse arm and a second arm parallel to the first named arm and vertically spaced

therefrom, the arms having aligned openings, a cup-supporting rod reciprocable in said openings in a rectilinear vertical path, means connected with the rod and the frame for reciprocating the rod, a ratchet having
5 inclined vertical teeth fixed to the rod adjacent a selected arm, and a pawl pivoted to said selected arm and adapted to be stopped thereby in position to engage a tooth of said
10 ratchet for causing the rod to move rotatively upon upward reciprocation thereof.

7. In a device of the character described, including a frame member and a member
15 slidable in the frame member, means including a slanting blade fixed to one of said members and a pawl pivoted on the other member and engageable with said blade upon sliding movement of the slidable member in the
20 frame member for conferring rotative motion on said slidable member.

In testimony whereof I affix my signature.

ELISHA B. JONES.

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